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The Flower Garden in Spring.

AT the flower show held at Madison Square Garden in this city on the first week of May, there was a collection of hardy plants in flower, grouped naturally as in an outdoor garden. A few expensive rarities could be found among them, but they were mainly the useful spring-flowering plants, like Anemones, Primulas and Polyanthus, of many colors, our native Trilliums, Epimediums, Bird's-foot Violets and mats of Moss Pinks, Columbines, Saxifrages, Spiræas, Gaillardias, Bellworts, Mertensias, Aubrietias, Globe flowers, Iceland Poppies, Irises, Doronicums and Lady's-slippers, nearly all of them plants which cost very little, are most easily grown and can always be had with little trouble in a May garden. This proved altogether the most attractive feature of the show. Visitors admired the cut Roses, the Carnations, the Orchids and the rich masses of Palms and other tropical plants, but they lingered long by the hardy garden and discussed its merits with singular animation.

This interest was not born of association merely, although there were many old-fashioned plants there; for people brought up in the city have no early memories of such flowers in city yards. Nor did the plants attract by a display of striking color, for all about them were masses of garden Tulips and Hyacinths, greenhouse Azaleas and Rhododendrons, which were much more brilliant and fairly dazzled with their bright colors. The reason for this popular preference plainly was that the flowers of early spring have a certain delicacy and grace which are unrivaled and peculiarly their own. Very brilliant in the autumn is the foliage of the Maples and Dogwoods, the Tupelos and Liquidamber, and most satisfying to the eye which has feasted all summer long on the luxuriant growth of field and forest. A shrubbery in late September, bordered with tall Rudbeckias and Silphiums, Vernonias and Sunflowers, has another kind of beauty which is exactly adapted to the prevailing tone of the maturing season. But the tender tints of opening leaves have a different range of color and one more beautiful, if possible, although less positive and emphatic; and the flowers of the season in some subtle way harmonize with the general color and atmosphere of the time.

Again, after a long winter, the flowers of spring have, in addition to their intrinsic beauty, the charm of novelty as the earth is waking into new life, and they have also the charm of promise as the forerunners of summer's luxuriance. Certain it is, at all events, that at no other time of the year are flowers quite as pleasing to the eye or do they make so strong an appeal to the imagination. Besides this, many of the readers of this journal leave their homes for the mountains or the sea as soon as the summer heat begins, so that April, May and June are really the only months when home gardens can be enjoyed. We have again and again urged the planting of deciduous flowering shrubs, the most of which are in bloom at this season, but why wait for the wealth of flowers from herbaceous plants until the summer, when these plants can make a garden so delightful in spring? To begin with, we have an almost endless variety of spring-flowering bulbous plants. Some persons, it is true, complain that they are tired of Hyacinths and Tulips; and when these bulbs are massed in formal beds they may become wearisome, but no one ever was tired of a Snowdrop or a Daffodil. No one ever had too many Squills or Alliums, Snowflakes or Crocuses, Fritillaries, Dog-tooth Violets, Lilies-of-the-valley, Grape Hyacinths or Ornithogalums when they are naturally scattered along the border of a wood-walk or among the grass in the fields or in the unoccupied parts of large grounds.

The keenest delight from horticulture only comes to those who make a careful study of a few genera or families of plants, and, in addition to their general love of flowers, devote themselves to some specialty. Such persons can find ample gratification in the spring garden. There are enough early Irises alone to keep one collecting and studying for years. Garden Tulips are beautiful, but there is a fascination about the different species which no one knows until he has begun to grow them and to study the beauty of the wild forms. The varieties of Narcissus are endless, and so are those of many other genera of spring-flowering plants. The appeal which these plants make is almost universal. No garden is so small that it has no room for them, and no garden is so large that it cannot be enriched and beautified by their presence. They will give pleasure to the most careless and afford opportunity for study to the most thoughtful specialist. No one who has a single rod of ground will regret devoting a part of it to the cultivation of this class of plants, and if a fair display is to be had next year it is none too early to begin preparing for it now, for the hardy plants which bloom next year in April and May must make preparation for it this year, and store up in bulb or root or bud the material to develop into beauty next spring.

THE abundant flowering of many small Apple-trees, this spring, reminds us of the pleasant duty of calling our readers' attention again to the beauty and value of these plants, which should find a place in every garden in this northern climate. The number and variety of Apple-trees with beautiful flowers and of good habit is considerable. The earliest to bloom are some of the white-flowered varieties of the Siberian Crab, Pyrus baccata. The young plants are noticeable for their formal pyramidal habit; this disappears as they grow to their full size and the mature plants present irregular oblong outlines. The flowers are large and snowy white, or they are often pink, for no tree varies more in the size and color of its flowers or in the character of the fruit, which is sometimes exceedingly beautiful, and often remains on the branches through the winter.

The next species to flower is the Japanese Crab, Pyrus Toringo, which is often found in gardens under the name of Pyrus Malus floribunda. This, it seems to us, is the most beautiful of its race and one of the best ornamental plants in cultivation. It is particularly beautiful before the flowers expand, when the bright red flower-buds cover the

branches. The Japanese Crab should be planted in rich soil and allowed plenty of room in which to spread its wand-like branches. The portrait of a well-grown specimen of this tree was published in this journal some years ago (vol. ii., p. 523), and gives a better idea of the masses of flowers it is capable of producing and of its surpassing loveliness than any words can convey. Improving with age, the Japanese Crab grows more beautiful every year; the severest winters leave it uninjured, and insects and disease pass it by. The variety with bright pink semi-double flowers, known as Pyrus Parkmani, is equally beautiful, although it is a rather less robust plant.

The flowers of the Japanese Crab are followed almost immediately by those of the Chinese Pyrus spectabilis, a bushy tree of spreading habit, known in our gardens in a double-flowered form only. This is one of the good old-fashioned trees our grandfathers planted, and the present generation knows little about. It is hardy, long-lived, not too large for a small garden or lawn, and so conspicuous in flower that the most careless and indifferent passer-by stops to admire its branches wreathed in pink and white.

This is the season of the year when the owners of gardens should inform themselves about such plants as these; and this is the time to order such plants, instead of waiting until next spring, when the nurserymen will have disposed of their best stock. The advice we give to persons who want a good garden is to make notes of the plants they see and admire now, and order them at once, prepare the ground carefully where they are to be planted, and then plant in the autumn or as early as possible next spring.

The New York Flower and Fruit Mission, which has been doing a good work for nearly a quarter of a century, has once more begun its operations for the summer season. This beautiful charity, which was established in London before it came to this country, has now distributing societies in almost all the great cities of the United States, and from country towns and villages, where there are few opportunities to dispense flowers, local missions send supplies to the organizations in the cities. It is gratifying to know that this work is carried on with such general and hearty co-operation. Individuals, social and church circles, and some of the women's colleges aid in various departments of the work, while the express companies carry all packages free of charge. On the opening day last week flowers were received here from as far away as Easton, Pennsylvania, and during the season contributions will come from at least two hundred and fifty towns in adjoining states. More than half a million bouquets are distributed by the New York Mission during the five months in which this work goes on, and as many as eleven thousand have been sent in one day to hospitals and tenements. Flowers that keep and carry well are, of course, the most acceptable, and no flowers are wanted which contributors would not be willing to send to their own sick friends. Fragrant flowers are also very desirable, and the mission never has too many packages of Pinks, Sweet Peas, Verbenas, Candytuft, or Mignonette. The first day's consignment to the Mission consisted largely of Lilacs, which came by the barrel, Apple-blossoms, Pansies and Marsh Marigolds, flowers which are always welcome. On Thursday the flowers arrived in much greater variety, including many wild flowers, little Violets, Solomon's Seal, Crane's-bills, Bluets, Columbines, Buttercups, Saxifrages and Pinxter flowers. Among garden flowers Pæonies, Lilies-of-the-valley, Tulips and Irises were most abundant.

All who wish to help in this work should remember that it facilitates the distribution if flowers of different kinds are separated—each kind by itself—in packing. In some gardens special beds are cultivated for the benefit of the Flower Mission, and young people who have been led to enter upon this work for the summer will learn a good deal about the habits and the cultivation of plants, in addition to rendering a kindly service to many whose days need to be brightened by help of this kind. There are never more flowers received than can be used, and those not fresh enough to be sent to the sick are distributed in the industrial schools of the city. But willing helpers to arrange the flowers and to carry them are always needed, as the greatest part of the work comes when many persons are out of town. Persons who have no flowers to send can find occupation for a few hours every Monday and Thursday at the rooms of the society, 104 East Twentieth Street, in this city, and no doubt the same opportunity to help is offered at the mission rooms in other cities. Full directions for packing and shipping will be given on application to any of the missions.

Flower Pictures.

THE portrayal of flowers is the most frequently attempted of all reproductions. Their simple, brilliant forms, their universal attractiveness, make the task of perpetuating them apparently easy, and without a knowledge of drawing or any special sense of color, the amateur makes them his prey in the effort to render his impression of them permanent. But nothing except the expression of the human face is more elusive than the loveliness of a flower, compounded as it is of hue, perfume and suggestiveness, of which elements only two lie within the artist's grasp, and one of these can only be rendered by the subtlest skill. Thus Mr. Lafarge will hang upon a Greek maiden's door a wreath of dewy blossoms, and by a magic touch suggest Hellenic charm; or he will float upon a silent pool some queenly Water-lily that awakens memories of hidden lakes. Behind the exquisitely rendered flower lies the sentiment of the man, the human interest, without which art is but paint and canvas.

Years ago there was shown in Boston a picture by Mr. Abbott Graves of a Rose-field in France. It was a great canvas, in which the level masses of flowers stretched away for acres. Among them women were at work gathering and binding up the rich harvest. Baskets heaped with Roses were in their hands, and in the foreground the bushes bent beneath the weight of blossoms of every tint and shade. The details have escaped my memory, but in it lingers the picture as a landscape full of sunshine, of sunny sky, of wide and airy expanse, of wealth of color and busy life. To paint thus is to catch that spirit which is the essence of true beauty, which leaves out the irrelevant and fixes only that which is essential to the conception, and in that manner secures eternal truth.

For a fragrant flower is Nature's consummate work. It lacks nothing of perfection. It appeals to every sense. Within its modest sphere it combines everything, and appeals to eye and mind with its gentle beauty, its fleeting grace, its balmy breath. Therefore, to render it is a task worthy of the greatest; nor have the masters ever failed to touch flowers with a reverent hand. The "fair lilies of eternal peace" in the hand of many an angel of the Annunciation, the tumbling roses of Rubens and the Venetians, the daisy-besprinkled grass beneath the feet of Raphael's soft Madonnas, the clambering vines of Correggio, all show a touch of sympathy and recognition of this widespread loveliness.

To the delicate perception of the Japanese, the rendering of a flower is congenial work. His deft brush, full of flowing color, renders at a touch the blending shades of the Convolvulus and Iris, which he loves to paint, or summarizes the bewildering splendor of the Chrysanthemum with a touch guided by an unerring perception of form. The rapidity and security of his execution keep pace with the swiftly changing flower, so that even its quick alterations cannot elude his keenness of vision.

In Mr. Parsons's pictures, shown in Boston and New York, and already carefully criticised in these columns, we again get that sympathetic understanding of the flower which is so rare in western art; and with him it is not only the flower itself, but the flowers as a part of the landscape and an expression of the taste of a people, that are marked features of his work. The tenderest minuteness of study of the individual blossom in his pictures, in no wise detracts from the breadth of his work. Against the deep blue of distant and majestic Fuji, the yellow Lily is defined in all its sculpturesque perfection, nor does either unduly subordinate the other. There is a view of a half-submerged Rice-field, covered with blue blossoms, which reflect the mottled azure of the sky above, that is a perfect illustration of the value of blue in landscape. There is a fine gradation of tint, a nice sense of atmospheric quality, that fill this picture with the essence of out-of-doors, and as a color-scheme make it, perhaps, the best of the collection. Another picture,

such as could be found nowhere but in old Japan, represents a stony hill-side, near Jennenji temple, glowing with Azaleas of the most brilliant tints. Here the rough boulders seem to have been fashioned into the semblance of gods, sitting placidly, with their hands upon their knees, amid the wealth of bloom, and in some cases the flowers seem to be growing in their stony arms. The little "wet gods" sit scattered about upon the hill in peaceful conclave, while the pink and crimson and white blossoms nod about their ears, and the brown twigs and small green leaves brush their shoulders. Grotesque it all is, but most child-like and pleasing, a delightful conception of unknown antiquity.

In many of these pictures the Bamboo plays its picturesque part, as it does in all the landscape of Japan, where its feathery foliage and polished jointed stems are a marked and beautiful feature of the country. Among Mr. Parsons's studies are very lovely glimpses of parks and forests, where this soft and brilliant green is contrasted with exquisite effect with the soft dark masses of the Pines and Cryptomerias, which are nobly rendered. Other scenes of misty hill-side and rich purple distance might have well been found nearer home. But the Palms and the Bamboos, the quaint gardens, with their stone lanterns, their dainty pavilions and their clipped bushes, are distinctively oriental, as are the tiny tea-houses and the way-side Buddha in the shadow of the rock, and the little dwelling which the artist occupied, its door-yard ablaze with flowering shrubs, huge purple Irises growing beside the foot-path.

We might well take a lesson for the planting of the Wistaria from these trellises, from which the great white blossoms hang, or these old trees of which the vines have taken possession and festooned with purple masses. But when may we hope to see such sheets of glowing red Lilies in our graveyards, or these pink fields of Polygonum contrasting so deliciously with the blue sky overhead, or such ponds of blue-leaved Lotus lifting their tall white blossoms serenely to the heavens? From flower pictures of other lands we can gain suggestions for the beautifying of our own grounds in quaint new fashions that may add to their attractiveness. The artist may reveal to us the value of a blossom alone or in mass, as Mr. Parsons shows us the worth of the great single Pæony against a building, in his picture of the temple-steps at Hasodera, or the splendor of the groups of red Azaleas, and the broad meadows full of purple Iris-blooms. One charming study of color is to be found in his Chrysanthemum Show, where the hues of the blossoms are echoed in the robes of the Japanese visitors, whose rich dresses and sashes are of the tints of the flowers themselves, so that the plants seem to have come down from their shelves to go walking about in the shaded light.

The special merit of this beautiful collection of pictures seems to be that nowhere is the color of the flower insisted upon at the expense of its character, which is the secret of the failure of many a flower-picture. Nor is this because Mr. Parsons shrinks from color, for, on the contrary, he revels in it; but because in his conception the blossom takes its proper place in the scheme of nature. Emphatic always, but subordinate to the greater landscape in which it plays its true part; either as a distinct and vivid foreground, or as a glowing middle distance, or as an integral part of an extended space in which it is appropriately prominent, but even here is modified in aggressiveness by its attendant foliage. Delicate and true drawing is also an important element in the success of these works of art, which bring to us on snowy winter days such an outlook into eternal summer. One of these water-colors might be set, framed like a window in the side of a room, so that one might seem to be looking out forever upon the charming scene, and thus have perpetual enjoyment of floating cloud or gleaming river or distant hill, with dancing flowers in the foreground to make a garden for us, no matter how sullen the skies of our winter at the time. For it is the especial mission of a flower-picture to perpetuate summer for us, to brighten the cheerless winter gloom with sunshine and glow and hint of sweetness. Without the icy winds may whistle, but within, upon our walls, Roses may smile and Azaleas flourish, while the rich Chrysanthemum shall prolong the glory of autumn.

Notes on the Forest Flora of Japan.—XIV.

THE Aralia family has no representative in eastern North America outside of the genus Aralia and only one woody plant, Aralia spinosa, a small tree of the middle and southern states. In Japan the family appears in no less than eight genera. The Ivy of Europe reaches Japan, where it is rather common in the south, although we did not meet with it north of the Hakone Mountains and the region about Fugi-san. Helwingia, a genus with two species of shrubs, remarkable in this family for the position of the flowers which are produced on the upper surface of the midribs of the leaves, is Japanese and Himalayan. In Japan Helwingia ranges to southern Yezo, where, in the peninsula south of Volcano Bay, in common with a number of other plants, it finds its most northern home.

In the flora of Japan, Fatsia is represented by the handsome evergreen plant, Fatsia (Aralia) Japonica, now well known in our conservatories, an inhabitant of the extreme southern part of the empire, although often cultivated in the gardens of Tōkyō, both in the open ground and in pots; and by Fatsia horrida, a low shrub with stout, well-armed stems, large palmately lobed leaves and bright red fruit, which is also common on the mountains of the north-west coast region of North America, from Oregon to Sitka. In Japan we found it growing under the dense shade of the Hemlock forests on steep rocky slopes above Lake Umoto, in the Nikko Mountains, at an elevation of five thousand feet above the sea-level, and in Yezo. The third member of the genus, Fatsia papyrifera, from the thick pith of whose branches the Chinese rice-paper is made, and an inhabitant of central and southern China and of Formosa, is frequently seen in Tōkyō gardens, as it is in those of the United States and Europe. In Yezo is found a representative of the Manchurian and Chinese genus Eleutherococcus, a shrub still to be introduced into our gardens, and Panax repens, a delicate herb with trailing stems and bright red fruit, which manages to live on mountain-slopes under the dense shade of Bamboos, while Dendropanax, a tropical genus of trees and shrubs of the New World, as well as of the Old, reaches southern Japan with a single shrubby species, Dendropanax Japonicum.

Aralia is more multiplied in species in eastern America, where six are known, than in Japan, whose flora contains only two, although a third, the Ginseng (Aralia quinquifolia), a native of Manchuria, northern China, and the United States, has been cultivated for centuries in Japan for the roots, which the Chinese esteem for medicine and buy in large quantities, sometimes paying fabulous prices for them, especially for the wild Manchurian roots which are considered more valuable than those obtained from North America or from plants cultivated in Japan, or in Corea, where Ginseng-cultivation is one of the most important branches of agriculture. Curiously enough, this North American and Chinese species was first made known to the outside world by Kœmpfer's description of the plants cultivated in Japan.

Of the indigenous Aralias of Japan, Aralia cordata is an herb with large pinnate leaves and long compound racemose panicles of white flowers, which are followed by showy black fruit. In habit and general appearance it resembles our North American Spikenard, Aralia racemosa, but it is a larger and handsomer plant, and well worth a place in the wild garden. In Japan Aralia cordata is often cultivated in the neighborhood of houses for the young shoots which, as well as the roots, are cooked and eaten. The second Japanese Aralia only differs from our American Aralia spinosa in its rather broader and more coarsely serrate leaflets and in the character and amount of pubescence which covers their lower surface. Aralia spinosa, var. canescens, is a common tree in Yezo and in all the low mountain-region of northern and central Hondo. It usually selects rather moist soil, and sometimes, under favorable conditions, rises to the height of thirty or forty feet and forms a straight, well-developed trunk. In Hondo large plants are rare, probably owing to the fact that the forests on the low and accessible mountain-slopes are frequently cut off, but the shrubby covering of such hills is almost always brightened in September by the great compound clusters of the white flowers of the Aralia which rise above it. The Japanese form does not appear to be much known in gardens, although young plants have lately been raised in the Arnold Arboretum from seed sent a few years ago

by Dr. Mayr from Japan; and it is the Manchurian variety, known as Aralia Chinensis, or as Dimorphanthus Mandshuricus, that is usually seen in our gardens, from which the American form, the type of the species, appears to have pretty nearly disappeared, although the name is common enough in nurserymen's catalogues.

But of all the Araliaceæ of Japan, Acanthopanax is the most interesting to the student of trees. It is a small genus of about eight species of trees and shrubs, all members of tropical Asia, and of China and Japan, where half a dozen of them have been found. The most important of the Japanese species are Acanthopanax ricinifolium and Acanthopanax sciadophylloides. Of the other species, Acanthopanax innovans is a small tree, of which I saw young plants only, on the Nagasendo, without flowers or fruit, and which is still to be introduced. Acanthopanax aculeatum, a shrub or small tree, with lustrous three or five parted leaves, is much planted in Japan in hedges and is hardy in southern Yezo, where, however, it has been introduced. Acanthopanax trichodon, of Franchet & Savatier, a doubtful species, which, from the description, must closely resemble Acanthopanax aculeatum, we did not see; but Acanthopanax sessiliflorum of Manchuria and northern China, and an old inhabitant of the Arnold Arboretum, we found evidently indigenous near Lake Umoto, in the Nikko Mountains, on the Nagasendo and in Yezo.

Acanthopanax sciadophylloides is still unknown in our gardens, and we were fortunate in securing an abundant supply of seeds. It is a handsome, shapely tree sometimes forty feet in height, with a trunk a foot in diameter covered with pale smooth bark and short small branches which form a narrow, oblong, round-topped head and slender glabrous unarmed branchlets. The leaves are alternate, and are borne on slender petioles with enlarged clasping bases, and four to seven inches in length, and are composed of five, or rarely of three, leaflets; these are oval or obovate, long-pointed, wedge-shaped at the base, coarsely serrate with incurved teeth tipped with long slender mucros, membranaceous, dark green on the upper surface, and pale or sometimes almost white on the lower, quite glabrous at maturity, five or six inches long and two or three inches broad, with stout petiolules sometimes an inch in length, broad pale midribs and about seven pairs of straight primary veins connected by conspicuous transverse reticulate veinlets. The flowers appear in early summer on slender pedicels in few-flowered umbels arranged in terminal panicles five or six inches across, with slender branches, the lower radiating at right angles to the stem, the upper erect. According to Franchet & Savatier the flowers are five-parted with acute calyx-teeth, oblong-obtuse greenish white petals and two united styles. The fruit, which is the size of a pea, is dark blue-black, somewhat flattened or angled, crowded with the remnants of the style, and contains two cartilaginous, flattened, one-seeded stones. This handsome species inhabits the mountain-forests of Nikko, where it is not common. Later we found it in great abundance on Mount Hakkoda, in northern Hondo, and in central Yezo, where it is common in the deciduous forests which clothe the hill-sides. Here it apparently attains its largest size, and grows with another species of this genus, Acanthopanax ricinifolium, the largest Aralia of Japan. I have followed the Japanese botanists in referring this tree to the Panax ricinifolia of Siebold & Zuccarini, although the plant cultivated in our gardens and in Europe as Acanthopanax ricinifolium or Aralia Maximowiczii is distinct from the Yezo tree in the more deeply lobed leaves with much broader sinuses between the lobes. A single individual similar to the plant of our gardens I saw growing in the forest near Fukushima, in central Japan, but, unfortunately, it was without flowers or fruit. And as I was unable to find any leaves on the Yezo trees with the broad sinuses of this plant or any intermediate forms, it will not be surprising if the forests of Japan are found to contain two species of simple-leaved arborescent Acanthopanax, in which case it will be necessary to examine Siebold's specimens to determine which species he called Panax ricinifolia.

In the forests of Yezo, where it is exceedingly common, Acanthopanax ricinifolium, as it will be called for the present at least, is a tree sometimes eighty feet in height, with a tall straight trunk four or five feet in diameter, covered with very thick, dark, deeply furrowed bark and immense limbs which stand out from the trunk at right angles like those of an old pasture Oak, and thick reddish brown, mostly erect, branchlets armed with stout, straight orange-colored prickles with much enlarged bases (see illustration on page 235 of this issue). The leaves are nearly orbicular, although rather broader than long, truncate at the base, divided to a third of their width or less by acute sinuses into five nearly triangular or ovate, acute, long-pointed lobes finely serrate with recurved callous-tipped teeth; they are five to seven ribbed, seven to ten inches across, dark green and very lustrous on the upper surface, light green on the lower surface, which is covered, especially in the axils of the ribs, with rufous pubescence. The small white flowers are produced on long slender pedicels in many-flowered umbels arranged in terminal compound, flat-topped panicles with long radiating branches, which are sometimes two feet in diameter; they appear in August and September, and are very conspicuous as they rise above the dark green foliage, giving to this fine tree an appearance entirely unlike that of any other inhabitant of northern forests.

Acanthopanax ricinifolium is common in Saghalin and Yezo, and I saw it occasionally on the mountains of central Hondo, where, however, it does not grow to the great size it attains in the forests of Yezo; here it is associated with Lindens, Magnolias, White Oaks, Birches, Maples, Cercidiphyllum, Walnuts, Carpinus and Ostrya. The wood is rather hard, straight-grained, light brown, with a fine satiny surface. In Yezo it is highly valued, and is used in considerable quantities in the interior finish of houses, and for furniture, cases, etc.

Our illustration is made from a photograph taken last summer on the wooded hill near Sapporo, and represents a large although by no means an exceptionally large or remarkable specimen. At the right of the Acanthopanax two young Magnolias have sent up their trunks in search for light, and on the left appear a number of stems of the noble Japanese Grape-vine (Vitis Coignetiae), which have climbed into its upper branches. *C. S. S.*

Foreign Correspondence.

London Letter.

Moutan Pæonies.—Two very large beds on one of the lawns at Kew were, last year, planted with a collection of these plants, which had been procured from Japan. They are now a magnificent picture, the stems about eighteen inches high, clothed with rich green leaves and each bearing a large beautiful flower of pure satiny white with golden stamens, or of red or pink or crimson or mauve. The old dull purplish rose variety, so commonly cultivated, is poor in comparison with the many new colors now to be had. A bed of Moutan or Tree Pæonies is worth a place in the very best of gardens.

Diervillas, or Weigelas, are wreathed with flowers now. A bed of a variety called Abel Carrière is exceptionally attractive. It forms a mass, a yard high and three yards through, of arching branches heavily laden with deep rosy red flowers. Another variety called Lemoinei has deep red flowers, rather small, but borne in great profusion. There are also white large-flowered varieties. These plants attract much attention at this time of year. A large bed of the golden-leaved D. Loogsmani aurea has been an effective mass of bright color on one of the lawns for the past six weeks. No shrubs are more easily managed, nor do any pay better for a little cultivation than these Diervillas.

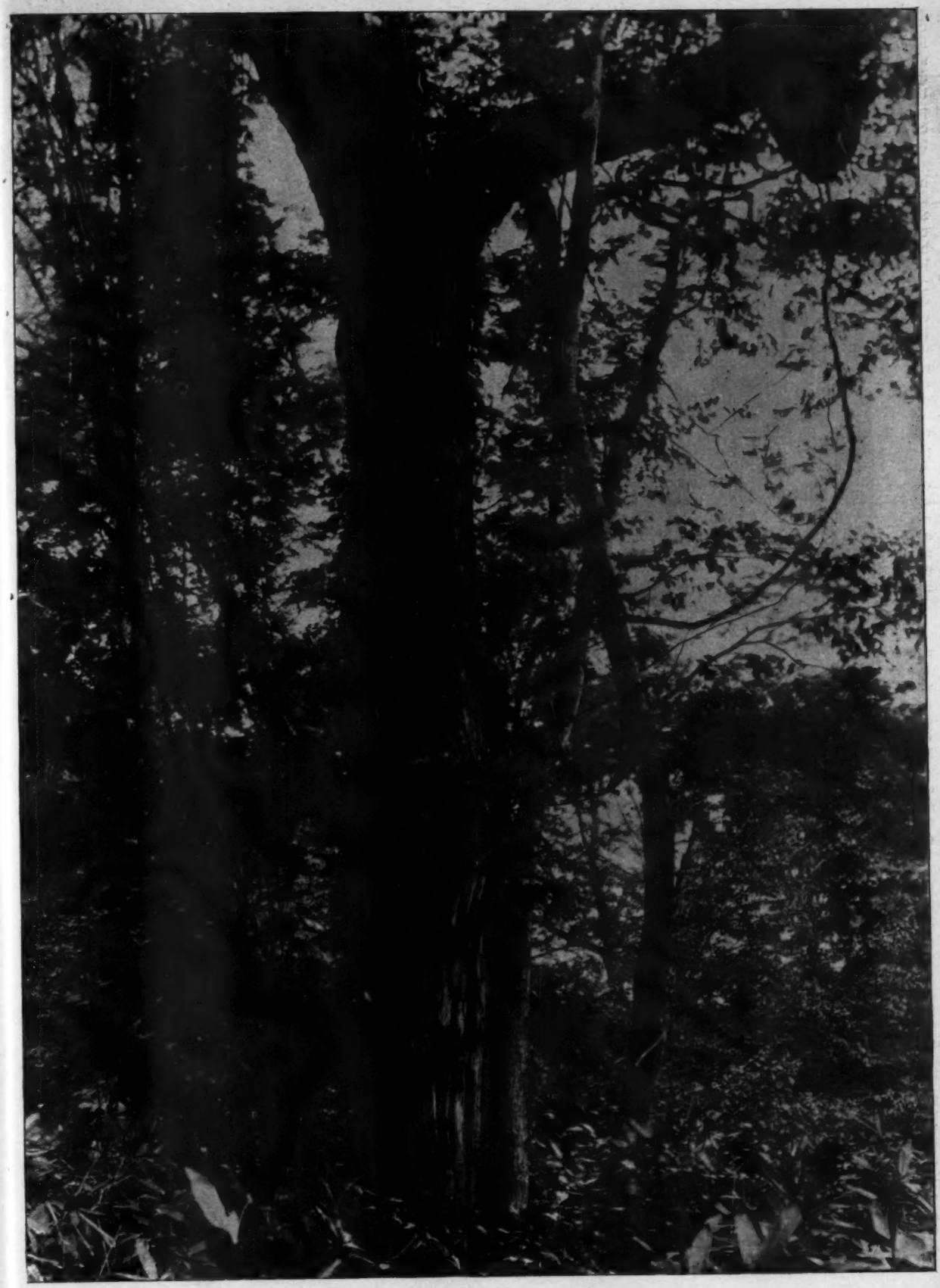

Fig. 36.—Acanthopanax ricinifolium, in the forests of Yezo.—See page 233.

Persian Lilac.—Bushes of varieties of this small-leaved, compact-growing Lilac have been masses of white or pale lilac fragrant flowers for the past fortnight. The value of shrubs of this character is not generally known, in England at any rate, if one may judge by the amount of attention they receive from visitors at Kew. They are admirable plants for the shrubbery, and they may be used with good effect as isolated specimens on lawns, in small gardens, or to fill a large bed where space can be afforded.

Rhododendron Vaseyi.—This North American Azalea has flowered most profusely here this year. Among the many varieties of the popular Ghent Azaleas and the various Swamp Honeysuckles from North America, which occupy a large space in the arboretum at Kew, A. Vaseyi has stood out conspicuously, its compact heads of flowers, borne on leafless branches, being rosy when they first expand, changing to white in a day or so, and possessing a charm that has won for it much attention from the thousands who have this year visited the Azalea garden at Kew. It is impossible to say too much in admiration of these plants as grown at Kew. They are planted in beds in an open space in one of the woods, covering at least half an acre; every bush is an irregular mass, from three to six feet high and through, of soft-colored fragrant flowers. Resting on the green turf and surrounded by large trees of Beech, Oak, Lime, etc., with openings here and there to allow of the Azaleas being seen from a distance, the flowering of this collection is considered one of the London horticultural events of the year. The Mollis Azaleas, now called R. sinensis, are distinct from the Ghent Azaleas in color, and generally in the size and shape of the flowers. They are known chiefly as useful pot-plants, but they have a greater value as hardy shrubs, and now that they are being improved and multiplied in variety they are likely to become rivals to the older, better-known Ghent Azaleas.

Solanum crispum, which some one has called the Tree-potato, is a useful, hardy shrub, which grows quickly and flowers freely, either as a bush or trained against a wall. It is an old garden-plant, but, like many such, is not too well known to be unworthy of a note. Against a wall at Kew it is crowded with pendent bunches of rich blue flowers. I have also seen it lately as a standard seven feet high, with long waving shoots wreathed in flowers. In Ireland it is not uncommon in cottagers' gardens, and at railway stations it is used for covering the walls of waiting-rooms, etc. It grows very freely, too freely, in fact, if in rich soil. We find it a good plan to cut out the thick fleshy shoots and encourage only the smaller, twiggier branches, as these flower most freely. It is a native of Chili.

Dracæna Sanderiana.—As the result of some misunderstanding between Messrs. Linden, of Brussels, and Messrs. F. Sander & Co., of St. Albans, the following particulars of the history of the plant called D. Sanderiana have been sent by Dr. Engler, of Berlin, to the *Gardeners' Chronicle* for publication: The plant was found by Mr. J. Braun, who in 1888 was sent by the German Government to explore the flora of the German Cameroon boundary in Africa. Braun found a green-leaved plant which was provisionally named D. thalioides, and also one with variegated leaves. These he brought home alive, and they were deposited at the Berlin Botanical Gardens. Mr. Braun afterward obtained permission to dispose of a portion of the plants to a Berlin nurseryman, who afterward sold them to Messrs. F. Sander & Co. Several of the plants were recently obtained from the Berlin Botanical Garden by Messrs. Linden, who exhibited them in London last week under the name of D. thalioides variegata. Plants were also shown at the same time by Messrs. Sander & Co. With regard to the name I am quite certain that D. Sanderiana is totally distinct from typical D. thalioides of Morren, figured in the *Belgique Horticole*, 1860, p. 338, and from its variety Aubryana, figured in the *Flore des Serres*, t. 2522-3, both of these plants being in cultivation at Kew. It is, of course, impossible to say what D. Sanderiana is until it flowers, but Mr. Baker agrees with me that it is either a new species of Dracæna or not a Dracæna at all.

Richardia Lutwychei.—This is described by Mr. N. E. Brown as a new species, which was distributed a few months ago under the name of Pride of the Congo, and was stated to have been imported from the region of Lake Nyanza. I saw the plant described by Mr. Brown, and to me it appeared to be nothing more than a form of R. melanoleuca, with the spathe a little longer and more convolute at the base than the plant figured in the *Botanical Magazine*. As a garden-plant it will not bear comparison with R. Pentlandii nor with R. Elliottiana, the size and color of its spathe being similar to those of R. hastata. I have also lately seen R. aurata, described as a hybrid between R. hastata and R. albo-maculata, and said to be identical with R. Pentlandii. It may be a hybrid, but it is no better as a garden-plant than either of the species it is said to be from. We have at Kew plants which came direct from Africa, and which I have good reasons for believing are R. Pentlandii.

New Plants certificated this week include the following: Ulmus Wreedii aurea, an erect fastigiate variety with small crinkled foliage of a golden hue. It is not unlike what is grown at Kew as U. campestris, var. fastigiata aurea. Rhododendron Helen Schiffner, a dwarf evergreen variety of the Ponticum type, with medium-sized pure white flowers in compact trusses, said to be a good plant for cultivation in pots. Lælia purpurata Lowiana, a variety with mauve-colored segments and a broad-lobed amethyst-purple lip. It is the deepest-colored variety I have seen. Cattleya Harold, a hybrid between C. Gaskelliana and C. gigas, raised by Mr. Norman Cookson. The sepals are three inches long, the petals very broad and wavy and colored soft mauve-purple, the large lip being deep purple, with darker veins and a yellow throat. Cypripedium Charles Rickman is a hybrid between C. bellatulum and a variety of C. barbatum. It is not unlike the hybrid raised by Sir Trevor Lawrence from C. bellatulum and C. Lawrenciana, and named by him C. Lawrebel.

London. *W. Watson.*

Cultural Department.

Fertilizers for Small Fruits.

In selecting the fertilizers suitable for small fruits the character of the soil must be taken into account as well as the kind of fruit, so that no formulas of universal application can be made. The effect of highly nitrogenous manures on Strawberries tends to a vigorous growth of foliage, while phosphoric acid and potash seem to do more toward producing and developing fruit. For this reason stable-manure is considered too stimulating, so that stable and yard manure are chiefly valuable as a mulch for covering the ground and furnishing humus for the soil. Even when used in this way, they are objectionable, because they contain so many seeds of weeds and grasses. I have seen somewhere an analysis of the Strawberry, in which the ash is said to contain about forty per cent. of potash, sixteen of lime and eleven of phosphoric acid. This high per cent. of potash justifies the American belief that wood-ashes and potash-salts are especially valuable as fertilizers for this fruit. They are used largely by the most careful and successful growers, and Strawberry-beds have been known to last for years with no other fertilizing than an annual dressing of wood-ashes. A good sample of ground bone should furnish from three to four per cent. of nitrogen and twenty to twenty-five per cent. of phosphoric acid. An application of 600 to 800 pounds to the acre on good soil ought to furnish enough of these ingredients for the requirements of the plants. If from 400 pounds to 600 pounds of muriate of potash, or the equivalent of this in wood-ashes, is added, food for a splendid crop of fruit will be furnished.

Ground bone has been considered a particularly good food for the Grape, and experience has proved with me that when potash-salts are liberally added to this, little else is needed. That the same is true of the Peach has been proved by many experiments. It is generally understood that potash gives quality and sweetness to the fruit, and Mr. Hale, the well-known grower, of Connecticut, claims that the high color of his fruit is due to the same source. The greatest success I have achieved has been with these two fertilizers almost exclusively.

One advantage of commercial fertilizers is that we can vary the ingredients in an experimental way—that is, we can try the effect of different proportions of potash and phosphoric acid and nitrogen, while it is almost impossible to do this with stable-manures. No hard and fast rules can be laid down, of course, but when I find my Strawberries lacking in vigor I give them some nitrate of soda as a stimulant, and its effect is plainly seen very soon. This salt should be applied during the growing season, and preferably in frequent small applications rather than all at once. Potash, bone, wood-ashes, etc., can be applied in the fall and winter, as they possess staying qualities, and will not leach away. In applying substances strong in alkalis it is best to keep them away from the foliage. When soil is deficient in humus the cleanest method of supplying this is by turning under some green crop, but in vineyards and among growing plants this is not always practicable. Unless I use some of the so-called complete mixed fertilizers, my potash, bone and nitrate are applied separately, and the mixing is done in the soil with the cultivator. I have just been making a large application of potash to some Peach-trees simply because I feared that the Canada ashes I had used would not suffice to bring on the crop, and I preferred to give the trees too much than to risk any deficiency.

It must be remembered that none of these fertilizers will be of any avail unless there is sufficient moisture to make them soluble and available. Last year I planted Potatoes among my Peach-trees, and I used a Potato fertilizer liberally. I had no crop of potatoes because it was so dry that the plants could not take up the plant-food provided, and so my Potatoes failed and my Peach-trees showed no benefit. However, I do not consider the application as lost, for it will be in the ground this year ready to feed my Peaches.

Montclair, N. J. *E. Williams.*

Filmy Ferns.

THE various species included under the general heading of Filmy Ferns have received but scant attention from cultivators of late years, and are rarely seen, either at our exhibitions or among the stock of our growers. This class includes some of the most exquisite members of the Fern family. They are of easy cultivation and of moderate growth, and are thus adapted for small ferneries, such as may be found in many private establishments. They require abundant moisture and shade to secure free growth, and a case or frame in the greenhouse is necessary, in which these conditions may be maintained without interfering with the proper ventilation of the main fernery. The case should be stood on or near to the ground rather than on a high bench, and generally these Ferns grow better without bottom-heat, many of the species flourishing in a temperature of fifty to fifty-five degrees.

The potting material should be of the most open character, and consist of coarse peat or pieces of Fern-root, some sphagnum and pieces of charcoal or broken sandstone, or both, with plenty of potsherds and broken stone in the bottoms of the pots or bed. The planting-out system is probably the best, unless the plants are very small. No sunshine should be permitted to strike these plants, the foliage being too thin and delicate to stand such exposure, and while some ventilation during the night should be given to the case in which they are grown, it should be kept closed during the day, unless the weather is quite damp. The practice of syringing or watering overhead is not to be recommended; quite enough moisture will gather on the foliage if the soil is properly wet, and syringing tends to brown the tips of the fronds. Frequent repotting or replanting should be avoided, for these Ferns are not hungry feeders, and the roots are quite delicate in texture and easily injured.

A few species of Filmy Ferns are inclined to be arborescent in habit, though in a very limited degree. The Todeas show this characteristic, but make only quite short stems, and are of slow growth. This genus includes some admirable examples with which to begin a collection of Filmy Ferns. Todea superba is one of the most beautiful Ferns in cultivation, while T. hymenophylloides and T. Fraserii are also very handsome, the fronds of the latter being lighter than those of T. superba and less profusely divided.

The Trichomanes are the largest genus among the Filmy Ferns, and the Killarney Fern, T. radicans, is the most widely known species, and also one of the best; it succeeds in quite a cool house. This Fern has been found in various forms in such widely separated portions of the globe as the East Indies, the West Indies, South America, Great Britain and other countries. T. reniforme is one of the most peculiar members of this family; it has nearly simple reniform or kidney-shaped leaves of small size, much veined and of bright green color, the fertile fronds having a very distinct appearance from the sori, being exserted around the edge like a fringe. Trichomanes trichoideum, T. alatum and T. augustatum are also interesting members of this genus and deserving of cultivation.

The Hymenophyllums are the next important genus among these Ferns, and of these H. demissum is one of the best, having finely divided leaves of dark green color, while H. Tunbridgense and H. Wilsoni are also good cool-house sorts, and H. dilatatum, H. flexuopesom, H. asplenioides, H. ciliatum and others may readily be added to the list if greater variety is desired.

Holmesburg, Pa. *W. H. Taplin.*

Hardy Plants in Flower.

DARWIN TULIPS, which are said to be a strain of Flemish origin, were introduced last year by Kreelage. They are late garden Tulips, self-colored and correct in form, according to the florists' standard of wide, well-rounded petals and perfect cups. They are on stems some two feet tall, like most of the late varieties. I do not know that the half-dozen named kinds grown by me are fairly representative of the strain; but mine are rather dull-colored and lack lustre and brightness, two of the most desirable characters in garden Tulips.

Camassia Leichtlini, a form of C. esculenta, is the most attractive garden-plant of the family. It is bold in habit, with large leaves and robust stems about two feet high, carrying many star-shaped creamy white flowers, about two inches in diameter, these blooming in succession from base to tip of stem. As a decorative plant its drawback is that it is an evening-bloomer, its flowers opening in the afternoon.

Zygadenus Fremonti is a Californian liliaceous plant, hardy here, and with attractive, quiet-colored flowers. These bulbs start early and strongly, and at this time are furnished with fleshy-flowering stems about a foot high. The flowers are numerous on paniculated racemes, individually about an inch in diameter, star-shaped, with pointed creamy white petals, with deep yellow bases. Though the first shoots of this plant appeared above the ground in early April, they were not affected by the subsequent frosts. Z. paniculata, also in flower, is a species smaller in all its parts than Z. Fremonti, but has the same general characteristics and habits. The slender stems are about a foot high and bear numerous small flowers, an inch in diameter, which are creamy white, with a yellow dot at the base of the narrow petals.

Thalictrum aquilegifolium, the meadow Rue or feathered Columbine, is a plant of graceful habit; the white form is especially enjoyable, though the panicle of fine flowers is smaller than that of the purple variety. The plants appear with the Columbines and die down soon after flowering, so that it is not a thing for borders which are frequently upset. The Maiden-hair Thalictrum (T. adiantifolium) is a beautiful little plant with fern-like foliage, well worth growing in the front of the border. Both of these are readily had from seeds.

Saxifraga Aizoon minor has become established, and is gradually making a mat of dainty rosettes among some stones in a raised border. These individually are less than an inch in diameter, with thick spathulate leaves having finely serrated white edges. At this time a flower-stem rises six inches from the centre of the elder rosettes, with numerous small flowers, white, with dark dots at the base of the petals. The plant and flower, it will be seen, are of a dainty order of beauty. The various small Saxifrages are very interesting, but I find them difficult to establish, and they do not take kindly to the climate. The larger rosetted kinds, and many of the mossy ones, resent wet, and incontinently decay. Besides this, the sun works havoc among them if they are not well established before it becomes powerful. S. Wallacei is one of the most attractive of garden Saxifrages, with deeply cut foliage and pure white large flowers, but has a bad habit of hardening its stems with the browning of its foliage. It would probably do better in a colder climate.

The white Wake-robin (Trillium grandiflorum) is decidedly the best garden-plant of this genus, with its large pure white flowers daintily placed on the abundant foliage. It is equally good in the open border or in the shade. Among the numerous other species, T. recurvatum is quaint and one of the most attractive. It is happily named; the buds appear above the leaves, between which they soon droop and open with a large flower; the inner segments are dark rich maroon in color and reflex tightly over the outer green segments, forming a triangle. A friend who noted its careful and regular folding aptly characterized the flower as tailor-made.

With the flowering of the double white Poet's Daffodil the Narcissus season is about at an end. These uncertain plants have flowered unusually well this season. Perhaps a very dry

fall and wet spring may have been helpful. There are also a few Bernardi Narcissi still in good shape. These are natural hybrids from the Pyrenees, with white perianths and short yellow, and sometimes orange-tipped, cups, the latter kind being especially valued.

Irises are the glory of the garden at this time. First in distinction stands I. Susiana in sober array; its welcome somewhat enhanced, perhaps, by the uncertainty of its appearance. Species too numerous to name have gradually appeared. Of the smaller kinds, I. oxysepala is a beauty with narrow, light lilac standards, and long-pointed falls of lightest mauve lined white and yellow. The native I. longipetala is also a dainty flower, finely veined on the falls, light blue on a white ground, and with narrow light blue standards. I. spectabilis (Regel) is smaller than either of these, with flowers somewhat resembling those of I. oxysepala in coloring and grass-like foliage. But the mass of color in the garden, in general effect quiet, but lustrous, is from the large bearded Irises, I. Florentina, I. pallida and the German hybrids. Noble flowers these all are, and with some exceptions beautiful, especially in masses. They are the commonest and cheapest of plants, yet always among the precious flowers to those who enjoy fine colors and noble forms. It is said that Irises are quite fugacious and their beauty is soon passed. This does not seem to me a fatal objection to a flower if it is beautiful. It is not from flowers or other objects always with us that we gain the most. The scheme of nature seems to be a constant change, and one of the delights of the garden is its daily change, its new color harmonies and foliage effects. Imagination is a desirable faculty for the gardener, and if well endowed he will see at all times the full wealth of his plants, even when they show to others no potency of beauty, and they are doubly enjoyable if, perhaps, they bring remembrances of some good friends, or remind him of other scenes.

Elizabeth, N. J. *J. N. Gerard.*

Correspondence.

The Poison Oak.

To the Editor of Garden and Forest:

Sir,—Will you kindly tell me whether the Poison Oak of California is the same as the Poison Oak, or Poison Ivy, of the east—Rhus toxicodendron? The poison of the former appears to be much more virulent than that of the latter in a case I have known.

South Hanover, Mass. *E. A. J.*

[The Poison Oak of California is known to botanists as Rhus diversiloba. It is a shrub with slender stems, three to five feet high, and resembles in general appearance the eastern Rhus Toxicodendron, or Poison Ivy, from which, however, it differs in its more acute leaflets, which are slightly toothed or entire, and in its nearly sessile panicles of flowers, usually more dense in fruit than those of the eastern plant. In California the Poison Oak, which grows also as far north as British Columbia, is exceedingly abundant in all the foot-hill regions, where it often forms thickets of great extent. It is, perhaps, even more virulent, to some people, at least, than the eastern plant.—Ed.]

Cornelian Cherry and Benzoin.

To the Editor of Garden and Forest:

Sir,—I was recently asked by a gentleman somewhat interested in trees and shrubs to point out the differences between the Cornelian Cherry, Cornus mas., and the Spice-bush, Lindera Benzoin. Few gardeners would hesitate an instant, even in winter-time, in determining plants so different as these, but people well informed on other subjects are often puzzled by what seem the easiest questions relating to plants. Both of these plants become shrubs from six to twelve or more feet high. Both produce clusters of small yellow flowers in early spring, although those of the Cornelian Cherry are a little in advance of the others. Beyond these points of similarity to the observant eye, the plants have few characters in common. The Cornus has leaves and buds in opposite pairs, the flower-buds in winter are conspicuously large and distinct, and from each one in early spring there are produced several four-petaled yellow flowers, each blossom borne on a distinct stalk. The Benzoin, on the other hand, has alternate, instead of opposite leaves, its light yellow flowers in little clusters are nearly sessile, and every part of the plant has a spicy, aromatic flavor and odor which is not present in the Cornus. The Cornus is inclined to become somewhat more of a tree than the Spice-bush, and being an introduction from Europe, it is only found in cultivation in this country, while the Benzoin is common along streams and in moist situations. Although usually found in moist ground, the Benzoin flourishes in any good garden-soil. As the essential reproductive organs are commonly separate, the staminate, or pollen-bearing, and the pistillate, or fruit-producing flowers, being on different plants, it is necessary in selecting individual plants to choose whether we prefer showiness of blossom or fruit. The fruit-producing plants have much less numerous and less showy flowers than the staminate ones. The oval bright scarlet berries in late summer and autumn are quite showy when abundant, but the flowers on the leafless branches in early spring probably attract quite as much attention.

Considering the long time that the Cornelian Cherry has been cultivated, it is surprising to find it so rare in American gardens. A shrub of such neat habit, so thoroughly hardy, such a free and reliable producer of showy flowers in early spring, deserves to be generally known and planted. Its cherry-like, cornelian-colored fruit is rarely produced in any quantity until after the plants attain considerable age and have been flowering for many years. The habit of producing so little fruit in proportion to the abundance of flowers may be of advantage in enabling the plant to maintain such a showy appearance regularly every spring.

Arnold Arboretum. *J.*

Nicotiana affinis.

To the Editor of Garden and Forest:

Sir,—Although Nicotiana affinis is an annual, I find that it makes a most desirable winter-blooming plant. After its seed matures and falls young plants spring up, and late last autumn I took up several of them, and they have bloomed constantly all winter, and that, too, in a stove-heated room where very few plants thrive. The foliage of the plant is rather coarse, it is true, but then it is thrifty, and has the beauty of health, and seems to be free from insects and diseases. The flowers have a disagreeable habit of closing up for the greater part of the day when outside, but when they open in the house, if the plant is kept out of the sun, they last for some time.

Bowling Green, Ky. *S. M. P.*

Recent Publications.

Forest Planting: A Treatise on the Care of Timber-lands and the Restoration of Denuded Woodlands on Plains and Mountains. By H. Nicholas Jarchow, LL.D. New York: Orange Judd Publishing Company.

In the preface to this book Dr. Jarchow states that it is written to meet the requirements of the state of New York, and he proceeds at once to lay down the principles of systematic forestry in Europe, as he understands them. Now, there are certain natural laws of tree-growth which are the same in all parts of the world, and there are certain requirements as to the preservation of natural forests and the reforesting of denuded lands which must be borne in mind by every one who successfully practices forestry. And, yet, the prevalent idea that the economical and physical conditions of this country should make us very cautious about adopting the details of European methods is rather reinforced than refuted by this treatise. For example, when Dr. Jarchow states that our forests can be made self-supporting if at regular intervals every harvested forest-product is sold at public auction, and not, as is now the practice, left to rot and create dangerous fire-traps, he plainly does not consider the difference between a country where every bundle of fagots can be sold and one where it would be impossible to give them away. One who recognizes the cost of labor here and the possible value of future forest-products, and who has besides some knowledge of tree-growth here, would hardly suggest the building about a nursery for raising forest-seedlings earth-walls from six to eight feet high, on the top of which are to be planted Birches, Pines and Alders, nor would he advise the watering of a young forest carefully with a rose-sprinkler. One more familiar with the lumbering operations of the country would hardly state that the price of timber has sunk far below its real value because of the depredations of timber thieves upon the public property of the state of New York. Nor would he assert positively that the introduction of systematic forestry into our state forests would soon and surely yield the state a revenue, or that one who buys wild land in New York and plants it with forest-trees can safely expect that in time the net proceeds of his investment will at

least equal the amount that would be received if placed in a savings-bank. These things have certainly not yet been proved in practice.

Dr. Jarchow's views on economic questions are peculiar. To illustrate one of his positions he supposes that a private person owns a mine which costs every year $100,000, while the output brings $100,000. In this case he says it is plain there will be no net profit. If, however, the government owned this mine and paid $100,000 for machinery and labor every year, and received for the output $100,000 a year, all that, he holds, would be clear gain to the state, because all the money paid out must be considered as a benefit to the state. It is possible to figure out the profitableness of state forests in this way, but the average American would hardly accept this method as accurate. We may add that Dr. Jarchow is not sufficiently familiar with our forest-trees to make him a trustworthy authority. He should not assert, for example, that the variety of trees of spontaneous growth in the state of New York is larger than it is in any other state of the Union. It is true, as he says, that American forests contain many trees which are not forest-trees proper, but which are of great value as a soil cover, as nurses, or for filling in between crops, or to promote the growth of true forest-trees in some way. Among the trees which are not "true forest-trees," by which, we apprehend, he means timber-trees, or trees which have a market value for some purpose, he mentions the Poplars, Basswood, the Locust, the Catalpa, the Tulip-tree and others. His statement that the planting of forest-trees can only succeed in places where there is no grass and where no grass would ordinarily grow for some years to come, is altogether erroneous so far as this country is concerned, and we apprehend it is erroneous when applied to any country of the same latitude in the north temperate zone. From all this it will be seen that we do not consider Dr. Jarchow's book a safe guide in its details, and yet it would be wrong to say that it has no value. Readers who have some familiarity with the subject, and who can be trusted to make the necessary reservations and exceptions, will find some instruction in the views of a man who has evidently a considerable knowledge of the methods of European forestry. The reader should know, however, how to translate some of the terms into English. For example, when Dr. Jarchow wishes to say "wind-break" he writes "wood-mantel" (Waldmantel). What Dr. Schlich calls coppice under standard, Dr. Jarchow speaks of as "middle forest" (Mittelwald).

The Columbian Exposition.

The Apple Exhibits.

APPLES of the crop of 1892, taken from cold-storage and exhibited in the Horticultural Building, are displayed by states and provinces, as follows: Maine, New York, New Jersey, Michigan, Wisconsin, Minnesota, Illinois, Missouri, Iowa, Colorado, Idaho, Washington, Oregon, California, Ontario, Quebec, Nova Scotia, Prince Edward Island; and New South Wales sends ten varieties of the current year's crop. The displays of apples from the north-western states—Idaho, Oregon, Washington—are characterized by fruits of enormous size, high color and remarkable freedom from scab. To an eastern man, the most interesting variety from these states is the Yellow Newtown Pippin, which is the leading apple over a great territory there, and which is twice as large as the same apple grown in the Hudson River valley. Blue Pearmain, which is little known in the eastern states, ranks second in general importance in the north-west, and specimens on exhibition here measure fourteen inches in circumference. The Idaho commissioner considers Yellow Newtown Pippin, Blue Pearmain, White Winter Pearmain, Winesap, Janet, Ben Davis, Wolf River and Esopus Spitzenburgh the leading winter apples for that state. He has an exhibition of twenty-three varieties in the fresh state, and an additional number in liquids. These are all grown upon the table-lands without irrigation. The Oregon and most of the Washington apples were grown under irrigation. There is a conspicuous difference in specimens of the same variety when grown with and without irrigation. The irrigated apples are usually larger than the others, higher-colored, better keepers, and have a superior flavor. The Oregon exhibit of apples is remarkable for its effective arrangement, the different colors and sizes being alternated and composed for the purpose of giving a general effect. There are twenty-six varieties in the exhibit, although the number of plates is much greater. Washington shows eighteen varieties, which are much like those from Oregon. The Washington commissioner would select the best winter apples for Washington as follows: Yellow Newtown Pippin, Blue Pearmain, Winesap, Red Cheek Pippin, Janet, Rome Beauty, White Winter Pearmain, Ben Davis, Swaar, Rhode Island Greening and Vandevere, the latter being recommended for very late fall. Apple-trees are commonly planted one rod apart in Washington, although twenty feet each way is probably the ideal distance for the eastern part of the state, where the sunlight is intense. Nearer the coast, where the atmosphere is less bright, two rods apart is perhaps the better distance. Ten-year-old trees should bear ten boxes of fifty pounds each, and the fruit should sell to general buyers for one cent per pound on the average. From California, plates of Ben Davis, Yellow Newtown Pippin and White Winter Pearmain were shown. Colorado shows handsome Ben Davis and an apple known in that state as Limber Twig, although it is, perhaps, not the Limber Twig of the east.

Missouri has one of the most attractive exhibits in the hall, although the green apples are mostly in storage at this writing. The Ben Davis is the leading variety in the display. In all states east of the Mississippi the apple-scab injury is apparent, and the apples are smaller and firmer than those from the west. Illinois shows over twenty sorts, among which the Ben Davis, Winesap, Jonathan and Janet are conspicuous. The Iowa and Michigan exhibits are small, owing mostly to the short crops in those states in 1892. Minnesota shows twenty-five varieties, many of which are scarcely known outside that state. The leading winter apple on exhibition is Wealthy. The most conspicuous Minnesota seedlings are the following: Malinda, an early winter apple, much like Yellow Bellflower in shape and color, although more regular, and perhaps somewhat longer than that variety; Peerless, a Duchess seedling, and thought by many to be the most promising of the new Minnesota apples. It is medium to large in size, oblong, marked like Duchess, although less highly colored; quality excellent. Parks' Winter, in color and shape, is much like Fall Pippin, although considerably smaller. It is usually marked with one or two russet lines radiating from the stem. Rollin's Russet is a flat, short-stemmed russet apple with a splashed green cheek, originating in the south-eastern part of the state. Ames closely resembles the Black Gilliflower in shape, but is more distinctly and lightly striped, and is, of course, much hardier. It is not yet propagated, but is promising on account of hardiness and productiveness.

Wisconsin has thirty varieties on the tables. Here, as in Minnesota, Wealthy leads. The Duchess seedlings are conspicuous. In Waupaca County alone thirteen Duchess seedlings are known, all but one of which are later and better than the parent. Little-known Wisconsin apples on exhibition are the following: Crocker, a variety originating in north-eastern New York. It closely resembles Pewaukee, but is much hardier and lighter-colored. Pewaukee is not sufficiently hardy to be profitable in Wisconsin. Rich's Greening has much the look of an uncolored Fall Pippin, and is said to be superior in flavor and keeping qualities to the north-western Greening. Blaine is a conical apple of size and color of Ben Davis, with a very long stem. Alden is much like Blaine, but a better bearer and better in quality. Matthew's Russet has much the appearance of Rollin's Russet, of Minnesota, but it is more uniformly russeted. Manning's Russet is a more conical apple, with a more uniform russet color and a better keeper. Jenny is evidently one of the Pewaukee family, but longer. It is very hardy and productive; quality fair. Ben Davis is not hardy in Minnesota and Wisconsin.

Passing to the eastward of Lake Michigan, one comes into the region where Baldwin is the leading apple. New York shows the greatest number of varieties of any state or province. Upon the opening, May 1, 110 varieties were upon the tables, and ten days later, when the judges passed upon the exhibit, 101 varieties were still shown. Canada is strongly represented. Ontario showed 555 plates when the judges passed, and thirty-eight varieties, nearly all standard kinds. Quebec showed eighty varieties, Nova Scotia eighty-nine, and Prince Edward Island twenty. The leading Ontario apples on exhibition are Baldwin, Hubbardston, Mann, Roxbury Russet, Canada Red, Ben Davis, Cranberry Pippin, Pewaukee, Ribston Pippin, American Pippin, King, Rhode Island Greening and Northern Spy. The leading Quebec sorts are McIntosh Red, Scott's Winter, Borsdorf, Wolf River, Canada Red, Flushing Spitzenburgh, Canada Baldwin, Pewaukee, Winter St. Lawrence, Pomme de Fer, Blue Pearmain, Haas, Bethel and Alexander. Switzer is one of the promising new kinds. Fameuse is disappearing because of scab. From Prince Edward Island, Canada Baldwin, Blenheim, Gravenstein, Ribston Pippin and Alexander are the chief varieties shown.

Maine shows a very handsome collection of thirty-five varieties, in which Baldwin, Northern Spy, Fameuse, American Golden Russet and Hubbardston are conspicuous. New Jersey has a small unnamed collection in a refrigerator case.

The New South Wales collection is from the current year's crop. It comprises the following varieties: Winter Pearmain, Claygate, Golden Russet, Kentucky Red Streak, Northern Spy, Pomme de Neige (Fameuse), Five-crowned Pippin, Triomphe de Luxembourg, New Hawthornden and Brown's Perfection. These apples average about the size of large New York specimens, but are not pronounced in color. The low color is, no doubt, due to early picking, as the samples were fifty-two days in transit. The Five-crowned Pippin is very like large specimens of Yellow Newtown Pippin in shape and color, but differs in the more prominent ridges, five in number, which crown the fruit. Its quality can scarcely be compared with the Newtowns on exhibition, from the fact that they have undoubtedly suffered somewhat in transit.

Taken as a whole, the apple exhibits do not adequately represent the apple-growing of the country. Most of them were collected hastily and in restricted portions of the various states, and some of them were taken wholly from commercial warehouses or cellars. Yet it is apparent that even an imperfect exhibit is a great advertisement to the state. The exhibits from Idaho, Oregon, Washington, Minnesota and Wisconsin, for instance, have attracted much attention and have already disabused the minds of thousands of people of disparaging notions which were held in regard to those states. The Canadian provinces have also attracted much attention. Some of the states still have apples in storage, and the plates are replaced as soon as the specimens become unfit for exhibition; yet the apple exhibits are constantly growing less, and they will soon give place to new fruits.

Chicago, Ill. *L. H. Bailey.*

Notes.

Fruit of the Kumquat, Citrus Aurantium, var. Japonica, from Florida, has been lately sold in this city in limited quantities under the name of Too-kin-kan, at sixty cents a dozen. This fruit is oval in shape, and is said to be more rare than the globose form.

Experiments seem to indicate that the deadly mildew of the Gooseberry can be kept in check if the plants are sprayed with a solution of sulphide of potassium of the strength of half an ounce to a gallon of water. This remedy is worth trying if it will enable us to have this admirable fruit in perfection here as it is grown in England.

Green Clover, cut while in blossom and applied early in June, is an admirable summer mulch for Raspberries and Blackberries. If enough of it is applied so as to lie four or five inches deep, and in a row a yard wide along the hills, it will form a compact mass, retain the moisture in the soil and enrich it. It is less liable to contain the seeds of weeds than coarse manure or straw.

The long period of wet weather this spring has delayed garden operations in many parts of the country. At such a time as this, the value of improved implements, by which planting and cultivating by horse power can be done rapidly, is readily seen. An Ohio farmer writes that he remembers the time when it took five men and two horses a day to plant ten acres of Corn, but now one man with a machine and check-row attachment can plant from fifteen to eighteen acres in a day.

Ex-Governor Hoyt, of Wyoming, who has been making an agricultural survey of that state under the direction of the Department of Agriculture, writes that its fifteen million acres of forest is a possession of incalculable value. The timber-limit here rises to a height of from 10,000 to 11,000 feet, and in view of the money value of this supply of timber, and of the yet more vital importance of these forests to the agriculture of the country, Governor Hoyt urges immediate action for their preservation, and adds that it is beyond comprehension that the fullest possible provision for their protection against fire and pillage has not already been made by the General Government.

The fruit-stores of this city are now receiving a small supply of what is known to the trade as the West Indian pomelo. It is somewhat pear-shaped, larger than what is usually sold as grape-fruit, and smaller than the shaddock. The flavor is somewhat inferior, and the fruit is dry, although occasionally a heavy one can be found which is more juicy. Cherries are very scarce, although they are now coming from as far north as North Carolina. The Carolina cherries, however, are inferior to the Californian fruit, which still commands seventy-five or eighty cents a pound. Peen-to peaches are now coming from Georgia, and so are Huckleberries and gooseberries.

There has just been issued by the Herbarium of Harvard University a *List of the Plants contained in the sixth edition of Gray's Manual*, compiled by John A. Allen. It forms a clearly printed, small octavo pamphlet of 130 pages, giving the names and authorities of 3,781 species, including the Hepaticæ. There is also an appendix, giving about 150 names of species to be added to those enumerated in Gray's Manual, or to be substituted for the names there used. The list, which will be very convenient for collectors, can be obtained at the Herbarium of Harvard University, the copies bound in paper costing ten cents and those bound in leatherette twenty-five cents apiece.

Covering grape-clusters with paper bags has long been practiced as a preventive of fungous disease, and it has been claimed that this practice often hastens maturity of different fruits. Experiments on this point at the Maine State Agricultural College Station last year did not show that the ripening of the fruit was hastened by bagging. A writer in the *Country Gentleman*, who was much annoyed by the depredations of birds in his vineyard, found that bagging the clusters was the best means of protecting them from these marauders. Grapes treated in this way can be left longer on the vines—that is, they will not be injured by the earliest frost, and, therefore, the season for the fruit may be prolonged.

Mr. T. Greiner, writing to the *Country Gentleman* on the merits of the various forms of the Bush Lima Bean, says that there is no reason why any one should grow a pole Sieva when its dwarf form can be as easily produced as any ordinary bush bean. The pods hang in close clusters and may be picked by the handful. They are not easily penetrated by water and the ripe beans will endure many rain-storms without any injury. This dwarf Sieva is the variety known as Henderson's Bush Lima. Kumerle's or Dreer's Bush Lima has a low spreading habit, with the pods massed close to the ground. It is a late variety, but in quality excels all others. It is suggested as an advisable plan to mulch the ground around the plants in some way so that the beans can be kept off the ground. Burpee's Bush Lima is a genuine acquisition, being fully as early as the pole Lima and bearing abundantly.

Extravagance in plant fashion and plant buying has not been confined to the Tulip maniacs of Holland or to the Orchid collectors of England and the United States, as the usually thrifty and self-contained Japanese may be equally absurd when possessed with the mania of fashion. There is in Japan a plant related to and very similar in general appearance to the Orontium of our marshes; it is the Rhodea Japonica, and naturally it has pretty bright green leaves, but just now it is the fashion in Japan to make collections of individuals with leaves variously variegated, striped or blotched. A green-leaved plant is worth, perhaps, one cent in Tōkyō, but it is said that as much as $3,000 has been offered and refused for a plant of three or four leaves which could not be duplicated in their peculiar marking; and in a recent issue of the *Gardeners' Chronicle*, Mr. J. H. Veitch, in his "Travelers' Notes," describes a visit to a grower of Rhodea in Tōkyō. Here he found a number of plants ranging in price from $50 to $2,000; the plant for which $2,000 was asked was twelve inches wide, five inches high, with eight leaves streaked with white.

The most attractive shrubs in Central Park during the past week have been the Tartarian Honeysuckles. Perhaps they appear better when planted singly on a lawn than when they are massed together, for one of their best features is the graceful outline of mature specimens when they spread out into superb masses with their branches bending to the grass on all sides. The flowers of this Honeysuckle, which are borne in profusion, are white, pink, rose or deep red and delicately perfumed. The shrub comes into leaf early; its foliage is luxuriant, pure in color and remains until late in the autumn, and the red or orange berries are ornamental. Another bush Honeysuckle is Lonicera Ruprechtiana, which resembles the Tartarian Honeysuckle in its general characteristics, but has still more beautiful fruit, which ripens at the end of June, and for a month the dark red berries, hanging in pairs in such abundance that all the branches droop under their weight, make the plant a conspicuously beautiful object. Another beautiful bush Honeysuckle is Lonicera Morrowi, which also bears a great quantity of bright berries, which show well against a background of lighter-colored leaves than those of the other species. All the bush Honeysuckles are admirable shrubs, including several native varieties. Lonicera Fragrantissima and L. Standishii, both of which are probably forms of the same species, the latter being the most hardy, have also been planted quite freely in Central Park. These belong to another class, the flowers of both appearing before the leaves. These flowers are pure white, as fragrant as violets, and in this latitude a few of them appear as early as February.